JET PROPULSION LABORATORY INTEROFFICE MEMORANDUM

October 5, 2004

TO: Eugene Burke

FROM: J. Retana

SUBJECT: National Oceanic and Atmospheric Administration - N (NOAA-N) Launch-Support Supportability Study

NOAA-N is a low earth orbiter mission and is requesting 26M subnet support on the Deep Space Network (DSN). The purpose of this study is to determine its supportability on the DSN during its launch phase based upon a February 12, 2005 launch.

Analysis was accomplished using the TIGRAS (Tracking Integrated Ground Resource Allocation System) scheduling tool.

Summary

Currently, 55% of NOAA-N's requested support for launch is free of contention. Negotiation with other 26M users (CHDR, DSS Maintenance, GTL, POLR and SOHO) will be required for NOAA-N to receive 100% DSN support.

Assumptions

NOAA-N is scheduled to launch on February 12th, 2005.

The Mid-Range schedule updated as of October 1st, 2004 is used for the study.

The view period file provided by NOAA/GSFC is used to determine the number of passes in each week during its launch phase.

DSS-34 is down for X/X-Ka Band installation from February 15th, 2005 to April 10th, 2005.

Requirements

NOAA-N is requesting DSN support for the first 8 days during its launch, initial/acquisition and early orbit phases. The view period file provided by the mission shows 12 passes in week 6 and 15 passes in week 7. The average pass durations are fourteen to fifteen minutes per pass during its launch phase.

Methodology

RAPSO Mid-Range schedule has already been negotiated through week 14 of 2005. NOAA-N will have to negotiate with the users on the 26M subnet for support during its launch period. Table-1 is summary of the present contention with NOAA-N in weeks 6 and 7. The table shows the missions in contention, their activities and the time periods that are in contention with requirements supporting NOAA-N launch. DSS-34 will not be available for negotiation at Canberra for CHDR, DSS Maintenance, GTL, POLR and SOHO due to its scheduled downtime for X/X-Ka Band installation. Figure-1 shows the activities that NOAA-N has requested and when it sits alone on the antenna line, there is no present contention. When there is another block that the NOAA-N symbol rests on then that shows the contention that is noted in Table-1.

Table-1

Week 6

DOY	PROJ	ANT	SOA	EOA	Activity
43	SOHO	DSS-46	0830	1810	VC4 SSR DUMP
43	POLR	DSS-16	1840	2140	PB/PB
44	GTL	DSS-66	0320	0500	TR DUMP 131S

Week 7

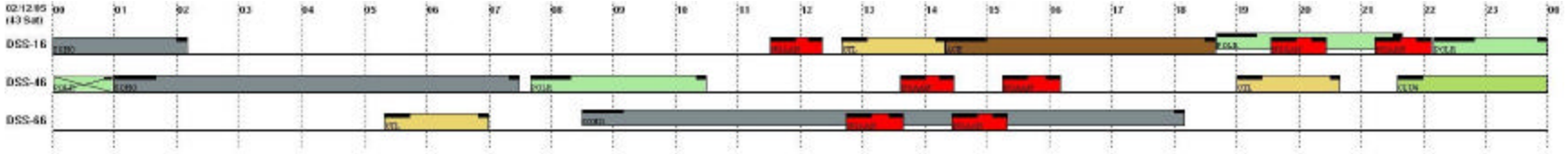
DOY	PROJ	ANT	SOA	EOA	Activity
45	CHDR	DSS-66	0210	0500	TKG PASS
45	DSS	DSS-46	0500	0900	ANTENNA PHASING
46	POLR	DSS-46	0440	0620	PB ONLY
48	POLR	DSS-46	0310	0450	PB ONLY
48	IMAG	DSS-46	0450	0640	SSR DUMP/UNATT
49	SOHO	DSS-46	0105	0540	TKG PASS
50	CHDR	DSS-66	0210	0500	TKG PASS
50	SOHO	DSS-46	0215	0720	VC4 SSR DUMP

NOAA-N is represented by the following symbol  in figure – 1.

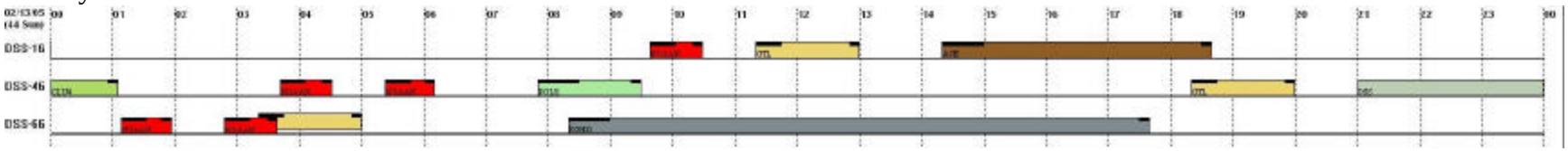
Figure-1 is a graphical representation of the current schedule and highlights the contention that NOAA-N has with other missions in weeks 6 and 7 on the 26M subnet.

Figure-1

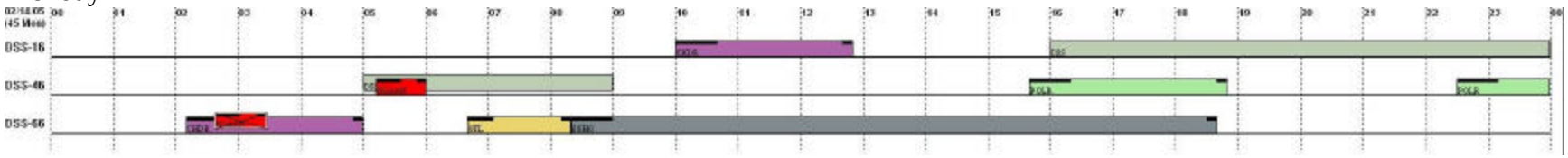
Week 6
Saturday



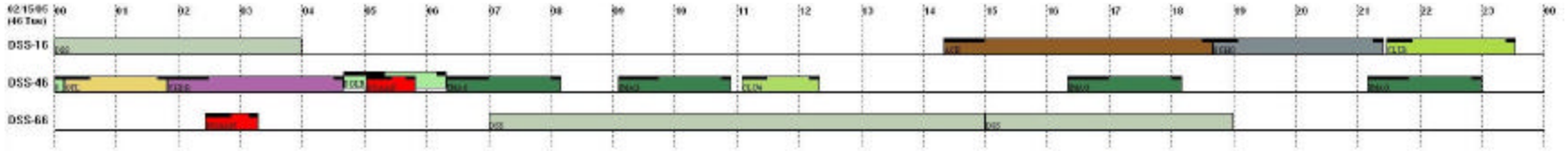
Sunday



Week 7
Monday



Tuesday



Wednesday

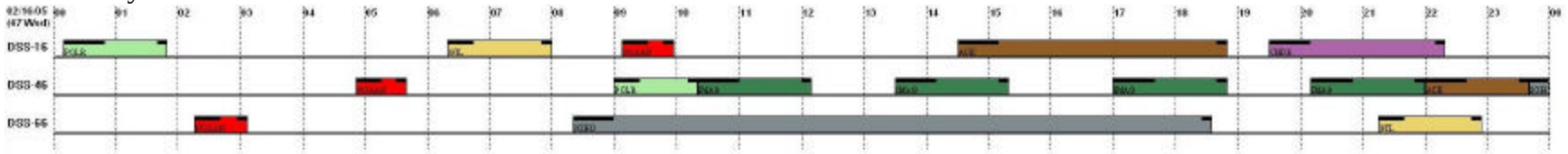
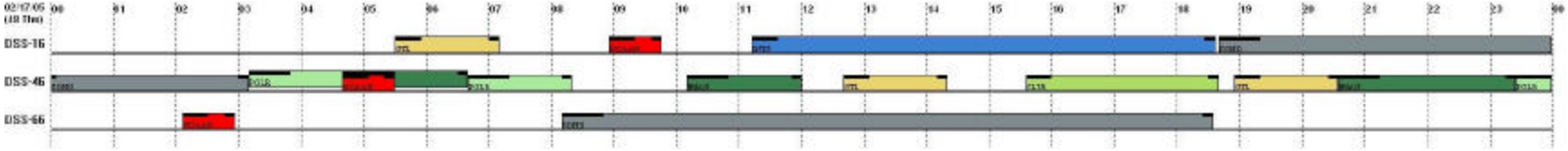
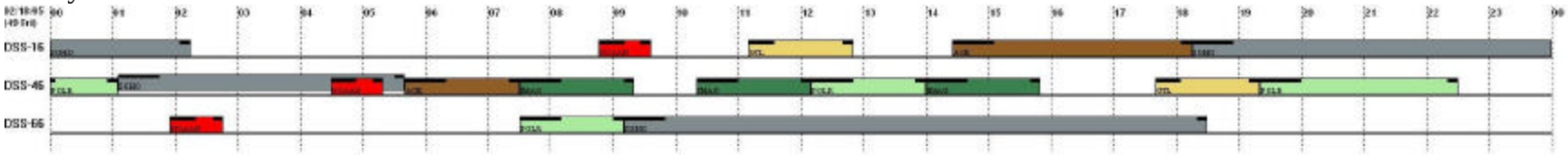


Figure-1 Continued

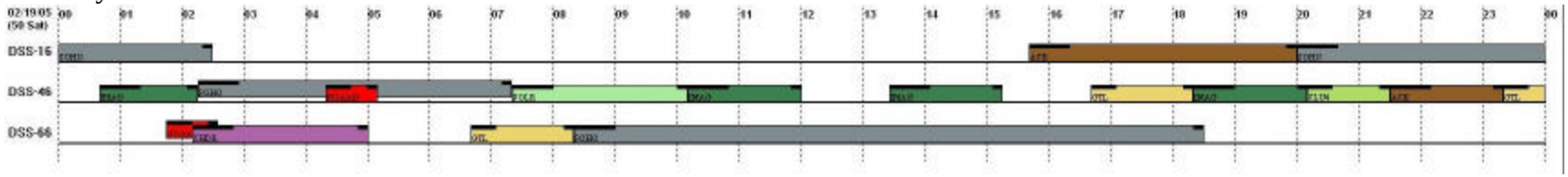
Thursday



Friday



Saturday



Conclusion

Based on the data shown in Table-1 and the graphical schedule representation in Figure-1, NOAA-N without any negotiation should receive 55% of its requested support for launch. However, CHDR, DSS Maintenance, GTL, POLR and SOHO will have to renegotiate their supports on the 26M subnet to accommodate the full NOAA-N launch requirements.

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